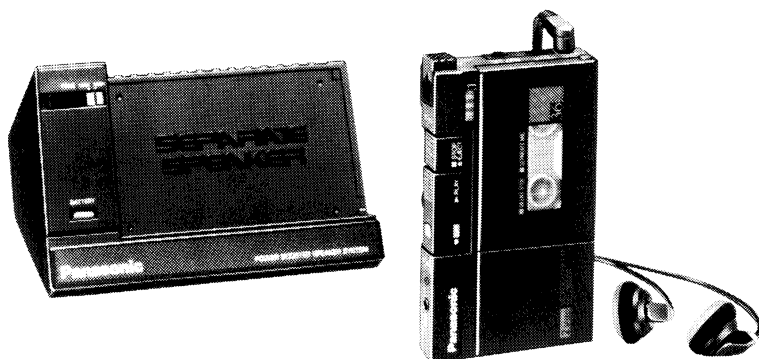


Service Manual

Microcassette Recorder

Microcassette
RN-Z36
(Black)



This is the Service Manual
for the following areas.

- Z** ...For all European areas except United Kingdom.
- E** ...For United Kingdom.
- X** ...For Asia, Latin America, Middle East and Africa areas.
- L** ...For Australia.

■ SPECIFICATIONS

Cassette Recorder

Power Requirement:

Motor:

Power Consumption:

Power Output:

Frequency Response:

Program Time:

Track System:

Tape Speed:

Fast Forward and Rewind Time:

Inputs:

Output:

Dimensions (W×H×D):

Weight:

Separate Speaker

Power Requirement:

Power Output:

Speaker:

Input Plug:

Dimensions (W×H×D):

Weight:

ZAC; with included Panasonic AC Adaptor RPAC1Z

EAC; with included Panasonic AC Adaptor RPAC1ZE

XAC; with included National AC Adaptor RPAC1X

LAC; with optional National AC Adaptor RPAC1XL

Battery; 1.5V (one UM-4 "AAA" size dry battery)

Electrical governor motor

4W (AC only)

15mW...RMS (max.)

200~6,000Hz

2 hours with RT-60MC microcassette tape (at LP speed)

1 hour with RT-60MC microcassette tape (at SP speed)

2 Track monaural recording and playback

SP; 2.4cm/s

LP; 1.2cm/s

Approx. 120 seconds with RT-60MC microcassette tape

Mic; sensitivity 0.25mV/applicable microphone impedance 200Ω~600Ω (φ2.5)

DC-in; 1.5V (φ3)

Monitor; 8Ω (φ2.5)

54mm×85.7mm×14.3mm

89g without batteries

Battery; 3V (two UM-3 "AA" size dry batteries)

300mW...RMS (max.)

55mm (8Ω) PM dynamic speaker

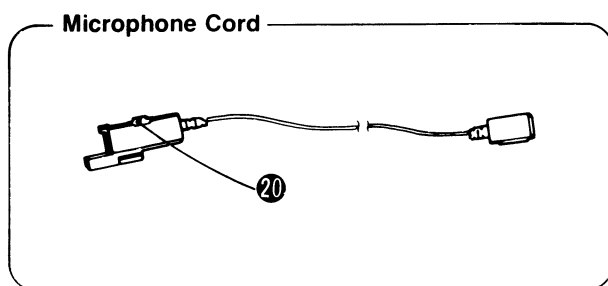
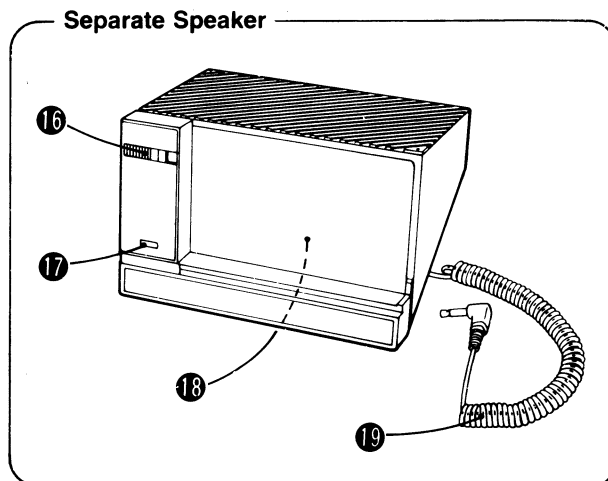
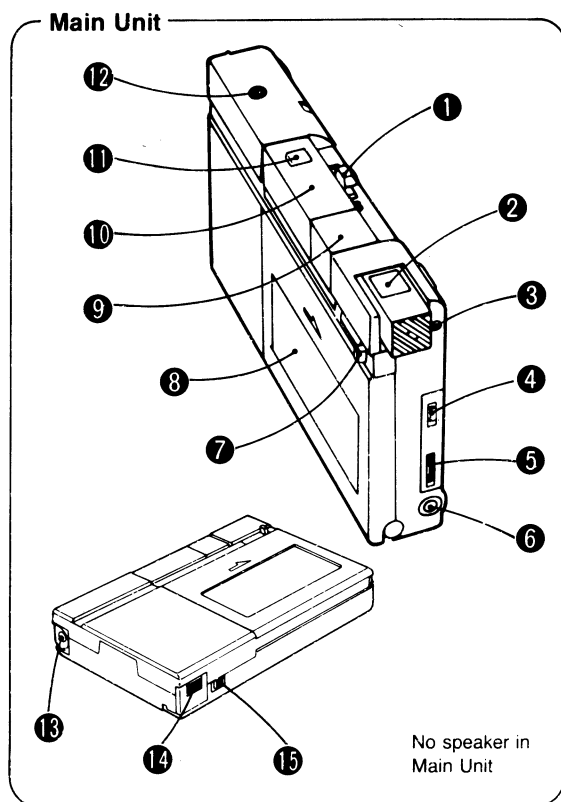
Monoral; 200Ω

110mm×67mm×102mm

230g without batteries

Design and specifications are subject to change without notice.

LOCATION OF CONTROLS AND COMPONENTS



- ① Fast Forward/Rewind Switch (◀◀ FF ▶▶ REW ◀ [QUICK])
- ② Separate Microphone
- ③ Recording/Battery Check Indicator (REC/BATT)
- ④ Mic Sensitivity Selector (MIC SENS)
- ⑤ Volume Control (VOLUME)
- ⑥ Monitor Jack [MONIT (8 Ω)] φ2.5
- ⑦ Tape Counter and Reset Button
- ⑧ Cassette Compartment
- ⑨ Stop/Eject Button (■ STOP/▲ EJECT)
- ⑩ Playback Button (▶ PLAY)
- ⑪ Record Button (● [REC])
- ⑫ Microphone Jack (MIC) [0.25mV/200~600Ω] φ2.5
Recording through the external mic. will not be possible if a plug is in the EXT. MIC. jack.
- ⑬ DC Input Jack [DC IN 1.5 V (⊖ ⊕)]
- ⑭ Battery Compartment
- ⑮ Tape Speed Selector (TAPE SPEED)
- ⑯ Tone Selector (TONE)
- ⑰ Battery Check Indicator (BATTERY)
- ⑱ Battery/Speaker Cord Compartment (bottom)
- ⑲ Speaker Cord
- ⑳ Remote Pause Control (PAUSE)

- Due to the unit's small size some markings are on the back of the unit.

■ Main Unit

• Battery life

When the battery becomes weak, the tape speed will slow down, the sound will become distorted, and the volume will decrease.

To check the condition of the battery:

1. Open the Cassette Compartment cover by pressing the Stop/Eject Button.
2. Press the Record Button.
3. When the Recording/Battery Check Indicator goes out or dims, it is time to replace the battery.

Note:

If the Set is not used for a long period of time or is used only from an AC power source, remove the battery to prevent potential damage due to possible battery leakage.

• Operating note

When using the recorder, be sure to plug in either the external microphone or microphone cord. If either is left unplugged, the RN-Z36 is placed in the Pause mode. Recording with the microphone cord plugged into the recorder erases the tape presently in the unit.

■ Separate Speaker

• Battery life

The Battery Check Indicator of the Separate Speaker indicates the condition of the batteries. When the indicator becomes dim or turned off, first check the battery of the main unit. If the battery does not become weak, replace all the batteries of the speaker with new ones.

This unit is equipped with a silent auto-stop mechanism, standard/long play 2-speed selector and quick FF/REW functions.

■ Quick FF and Quick REW

During playback, the Fast Forward/Rewind Switch is set to "◀◀FF" or "▶▶REW", the tape will be rapidly forwarded or rewound. But, the sound cannot be heard.

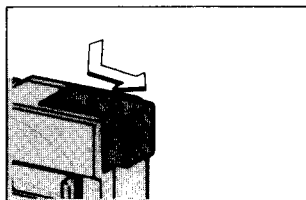
To start playback again, remove your finger.

■ Silent Full Auto-Stop

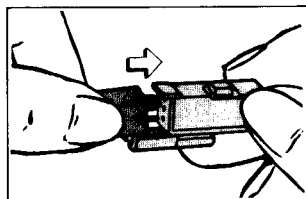
When the tape reaches its end the tape stops moving and the power is turned off automatically. After Silent Auto-Stop functions, be sure to press the Stop/Eject Button to release the Buttons or Switch.

■ Using the Separate Microphone with the Microphone Cord

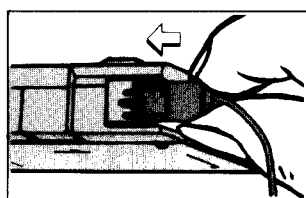
1. Disconnect the Separate Microphone from the unit.



2. Connect the Separate Microphone to the Microphone cord.



3. Connect the plug of the Microphone Cord to the main unit.



■ Operation of the Separate Speaker

The external speaker supplied with the recorder has an Auto Power Switch feature which automatically turns the speaker power on and off according to the level of playback signal from the recorder.

It should be noted, however, that the speaker power may fail to turn on if the volume setting on the recorder is too low. Set the recorder volume to your normal listening level.

To turn the speaker power off, either pull out the speaker cord from the recorder or place the recorder in the Stop mode. The power will turn off approximately 6 seconds later (the battery indicator goes off).

■ 2.4 cm/s (15/16 ips) (Standard Play)

When the Tape Speed Selector is set to the "2.4 SP" position, it is possible to record on both sides for a total of 60 minutes, using MC-60 tape.

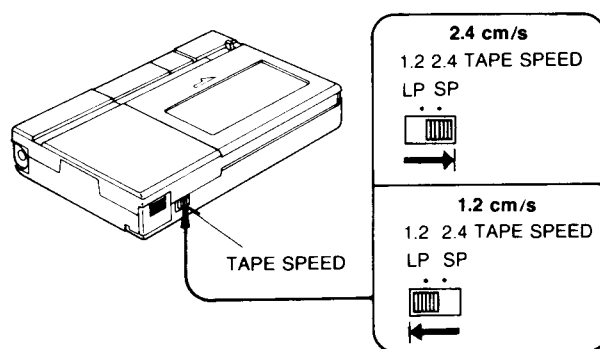
This speed is suggested for best recorded sound quality.

■ 1.2 cm/s (15/32 ips) (Long Play)

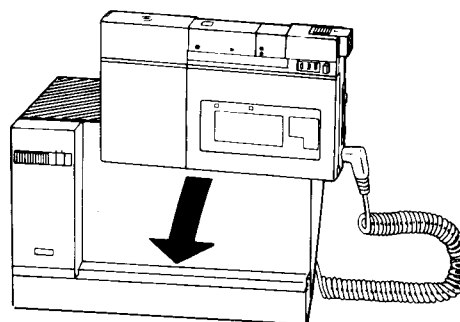
To record a meeting or conference, or when long recording time is otherwise required, set the Tape Speed Selector to the "1.2 LP" position.

This will make it possible to record on both sides for a total of 120 minutes, using MC-60 tape.

If the tape may possibly be later played back on a different unit, it is suggested that the 2.4 cm/s (15/16 ips) speed be used if possible, because the sound quality may change if tape recorded at the 1.2 cm/s (15/32 ips) speed is played back on a different unit.



- The main unit can be put on the front space of the Separate Speaker.



■ Note:

Do not bring magnetized commuter passes, credit cards, recorded tapes, etc. close to the front space of the Separate Speaker because a strong magnet is used there.

DISASSEMBLY INSTRUCTIONS

- Disassembly and assemble the unit with care since a flexible printed circuit board is used. Also exercise care when handling the head leads section as they are fragile.

HOW TO REMOVE THE UPPER CABINET ASS'Y (Shown in Fig. 1~6)

1. Remove the battery cover (A)×1. (Fig. 1)
2. Remove the separate microphone (B)×1. (Fig. 1)
3. Take out the screws (C)×2 (1.1×1.4)mm, and press the STOP/EJECT button to open the cassette lid. (Fig. 1, 2)
4. Lift one side of the cassette lid (D) in the direction of arrow ① and unhook it from the cassette holder ass'y. (Fig. 2, 3)
5. After removing the cassette lid (D), be sure to also remove spacer (E) in the direction of arrow ②. (Fig. 2)
6. Take out the screws (F)×4 (1.4×2)mm and remove the front cabinet ass'y (G). (When reassembling, install screw ① first.) (Fig. 4, 5)
7. Remove the jack holder (H). (Fig. 4, 6)... **Note:** For installation, refer to Fig. 9.

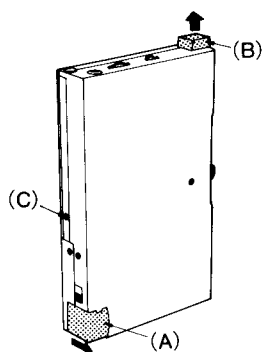


Fig. 1

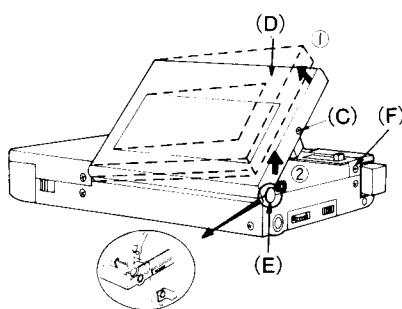


Fig. 2

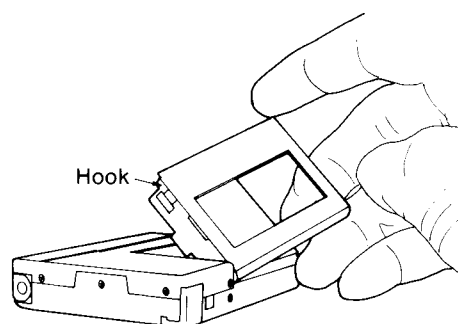


Fig. 3

Remove and install this part of the upper cabinet with care as it may bend.

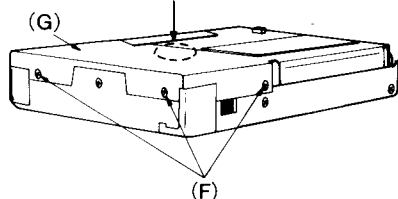


Fig. 4

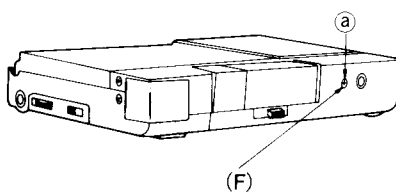


Fig. 5

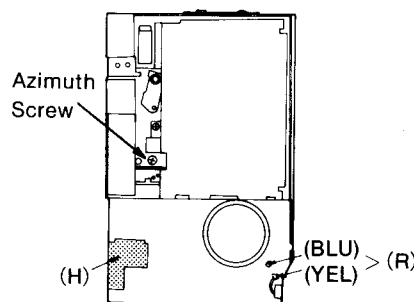


Fig. 6

HOW TO REMOVE THE BOTTOM CABINET (Shown in Fig. 7~9)

1. Remove the screws (I)×4 (1.4×2)mm. (Fig. 7, 8)
Note:
If screw (L) and (N) are removed, fastening plates (M) and (O) will fall out with removal of the bottom cabinet.
2. Unhook the rear cabinet ass'y from the battery case locks (J)×2 by pulling it forward. (Fig. 9)
3. Remove the bottom cabinet (K)×1. (Fig. 8)
4. Remove the screw (L)×1 (1.4×2)mm and remove the fastening plate (M)×1. (Fig. 9)
5. Remove the screw (N)×1 (1.4×1.4)mm and remove the fastening plate (O)×1. (Fig. 9)

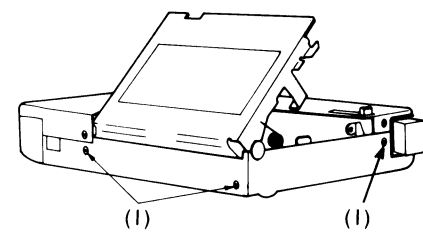


Fig. 7

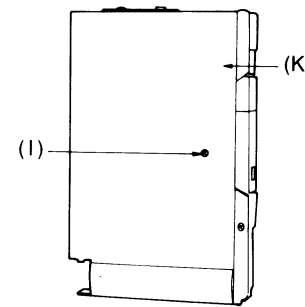


Fig. 8

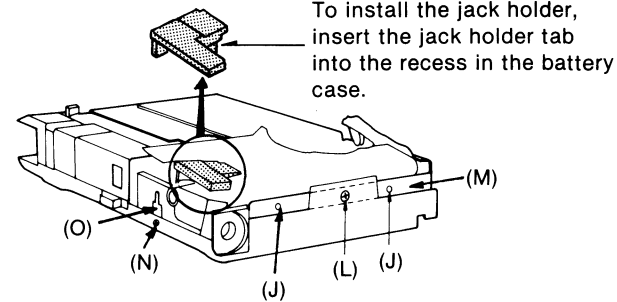


Fig. 9

Note:
To install the jack holder, insert the jack holder tab into the recess in the battery case.

HOW TO REMOVE THE PRINT CIRCUIT BOARD (Shown in Fig. 6, 10~14)

1. Slightly lift the end of the PC board as shown in Fig. 11, and pull out the mic sensitivity select switch knob (P). (Fig. 10, 11) (Do not lift the PC board too high as the pattern foil on the board may be damaged.)
2. Remove the switch holder (Q). (Fig. 11)
3. Unsolder the motor lead wires (R). (Fig. 6)
4. Take out the screw (S)×1 (1.6×2.2)mm and screw (T)×1 (1.4×1.4)mm and unsolder (U) and (V). (Fig. 12)
5. Remove the tape speed selector switch knob (W) and cover-B (X). (Fig. 13)
6. Remove the screw (Y) (1.4×1.4)mm securing the recording switch. (Fig. 13)
7. Unsolder the head lead wires (Z) and remove the PC board ass'y from the mechanism. (Fig. 14)

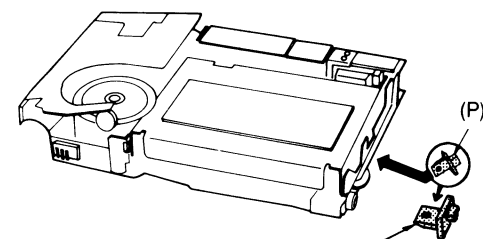


Fig. 10

Insert into the slot in (Q) with this side facing down.

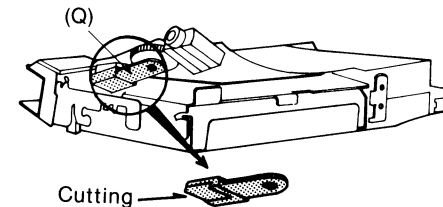


Fig. 11

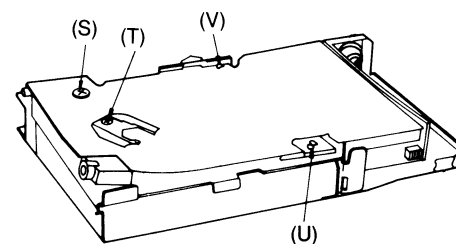


Fig. 12

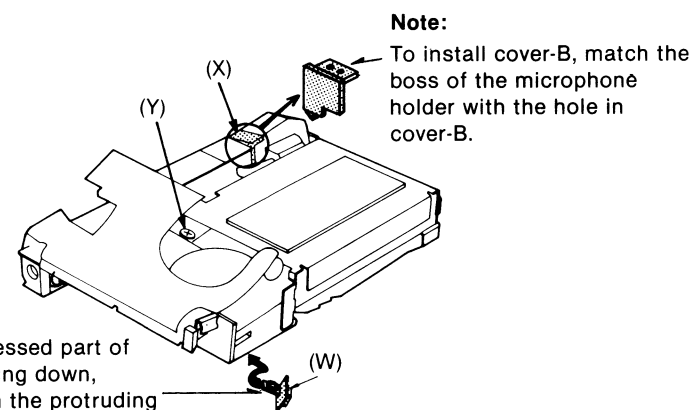


Fig. 13

Note:
To install cover-B, match the boss of the microphone holder with the hole in cover-B.

With the recessed part of the knob facing down, match it with the protruding part of the switch.

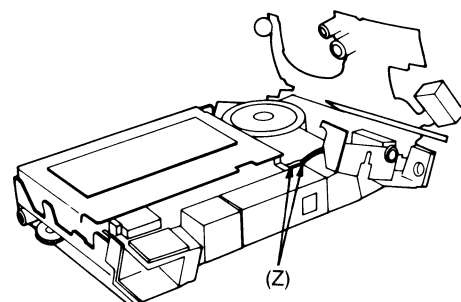


Fig. 14

■ When checking IC1

To protect surrounding components and maintain insulation, an insulation sheet is attached to IC1. Thus, when checking IC1, remove the sheet, taking care not to peel or cut the foil off the board. After checking, replace the insulation sheet or attach other insulation tape so that the IC does not contact the surrounding components.

DISASSEMBLY PROCEDURES FOR THE MAJOR MECHANICAL PARTS

Ref. No.	Shown in Fig. —.	To remove —.	Remove —.
1	1	R/P Head (*1)	Screw (1.4×1.4)mm(A)×1
2	1		Azimuth screw(B)×1
3	1	Supply Reel Table	Washer(C)×1
4	1	Takeup Reel Table (*2)	Washer(D)×1
5	1	Pinch Roller (*3)	Washer(E)×1
6	2	Flywheel Holding Plate (*4)	Screw (1.4×1.4)mm(F)×5
7	2	Motor (*5)	Screw (1.6×3)mm(G)×2

- (*1) After replacing the head, be sure to perform azimuth adjustment (see the Alignment Procedure on page 9).
- (*2) A tape counter driving belt is wound around the reel base. When removing the reel base, be sure to take off the belt first.
- (*3) The pinch roller pressure spring is set in place behind the pinch roller. When replacing the pinch roller, make sure the spring does not become deformed.
- (*4) If the mechanism is turned upside down after the flywheel bearing plate has been removed, some parts (collars, springs, etc.) will drop off the chassis. Do not lose them.
- (*5) After replacing the motor, be sure to perform motor speed alignment.

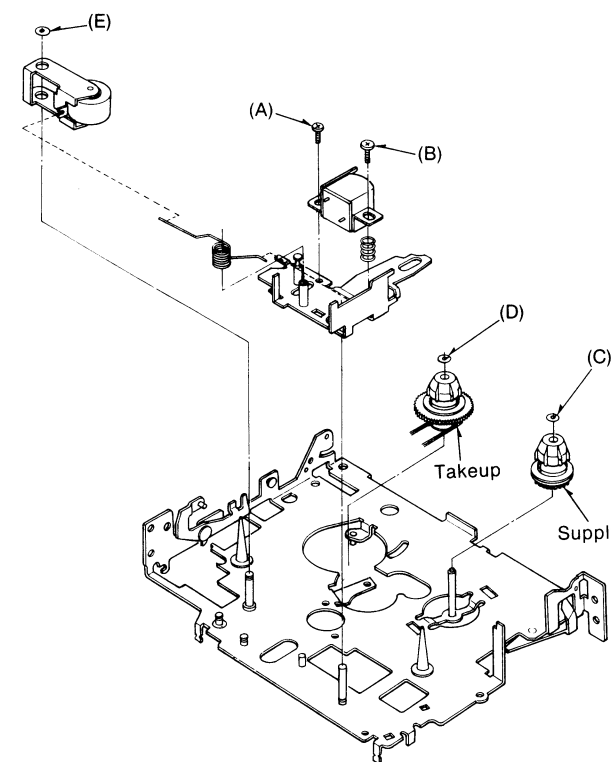


Fig. 1

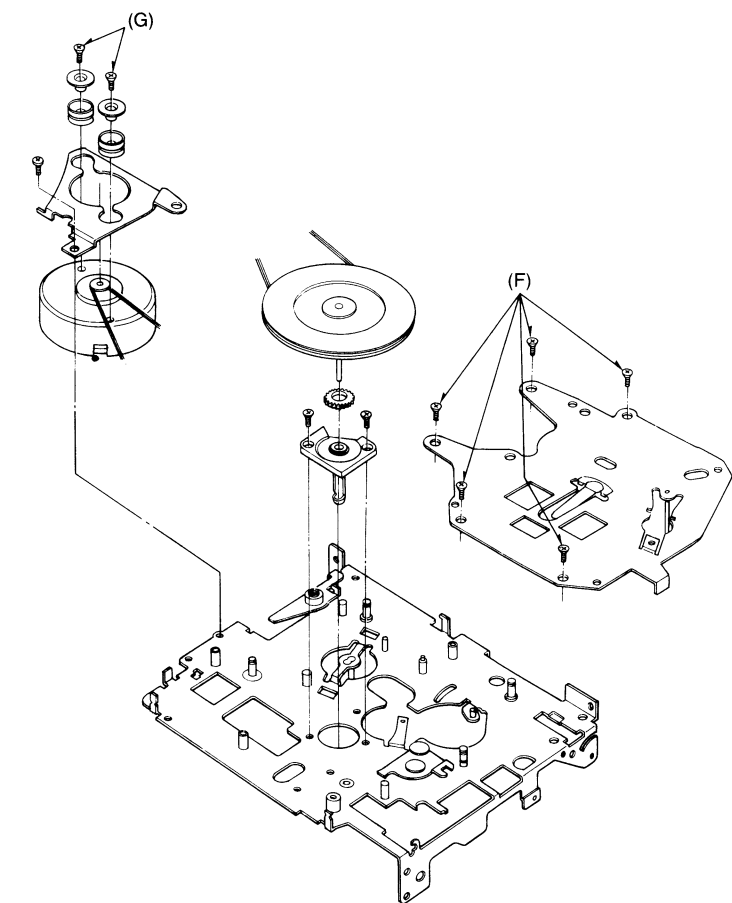
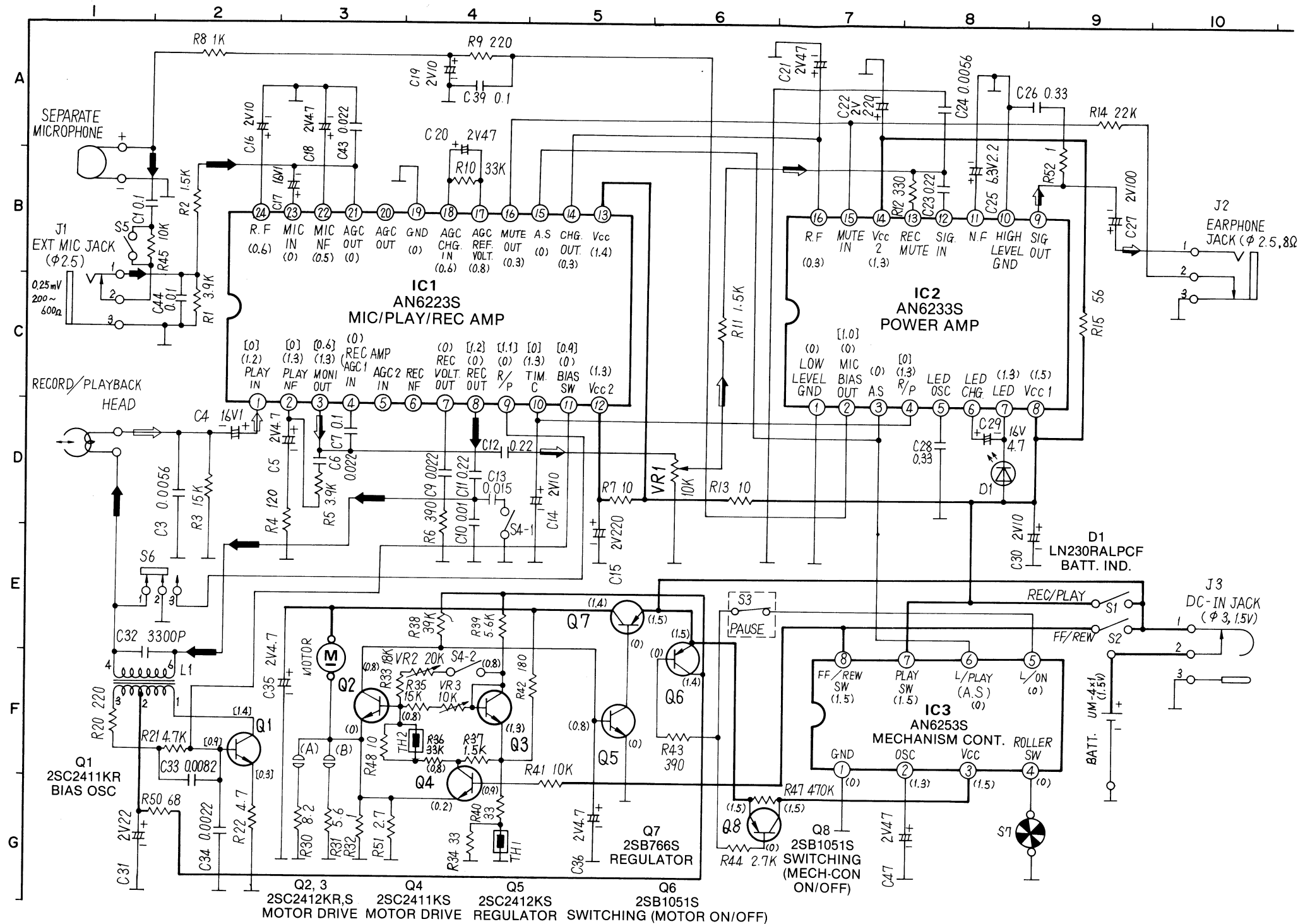


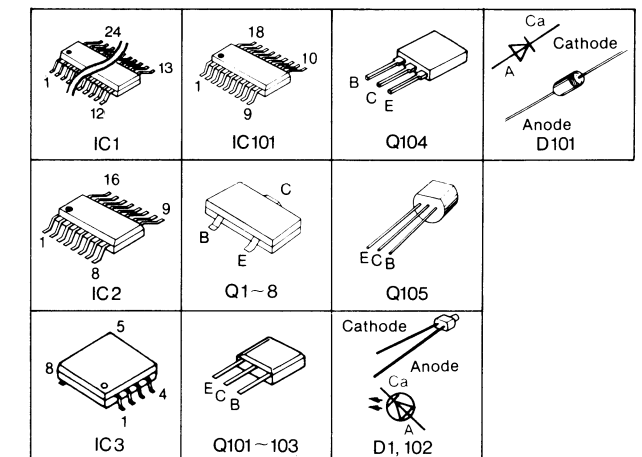
Fig. 2

SCHEMATIC DIAGRAM







Notes:

1. S1: REC/PLAY switch in "OFF" position.
2. S2: FF/REW switch in "OFF" position.
3. S3: PAUSE switch in "OFF" position.
(with mic cord)
4. S4-1, S4-2: Tape speed select switch in "2.4cm/s" position.
(ON...1.2cm/s, OFF...2.4cm/s)
5. S5: Mic sens select switch in "LOW" position.
(ON...HIGH, OFF...LOW)
6. S6: Record/Playback switch
"Playback" position.(1...Playback,
3...Record)
7. S7: Rotary detect switch.
8. VR1: Volume control VR.
9. VR2: Tape speed adjustment VR (for 1.2cm/s).
10. VR3: Tape speed adjustment VR (for 2.4cm/s).
11. DC voltage measurement are taken with electronics
voltmeter from negative terminal of battery.
()...Playback position, []...Record position.
12. Battery current: Record.....70mA

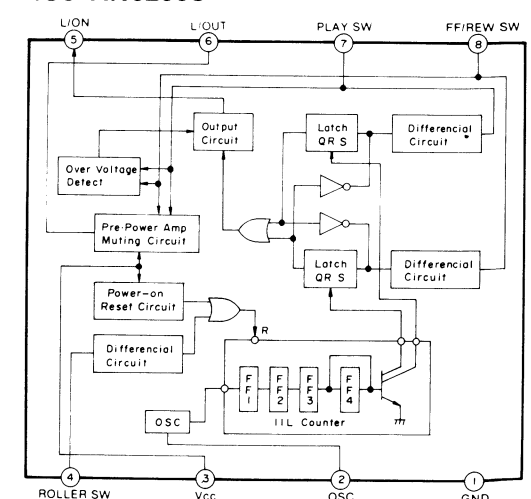


Note:

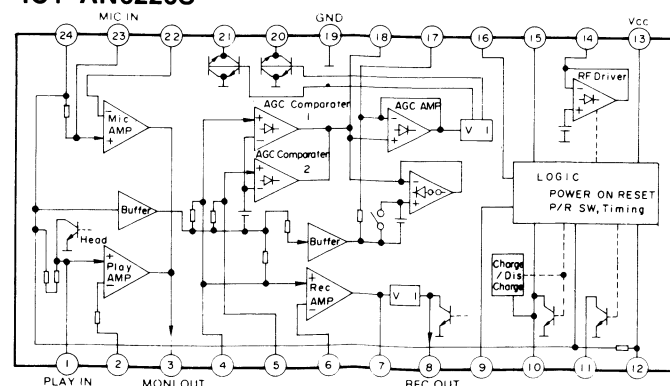
Electrical parts, such as IC101, Q101 through 105, D101 and D102, are installed on a separate speaker PC board.

 + Ⓑ Voltage Line  Record Signal Line
 Playback Signal Line  Playback/Record Signal Line

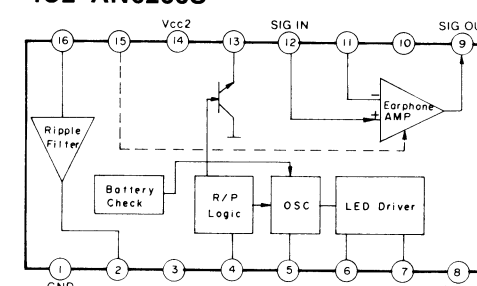
IC3 AN6253S



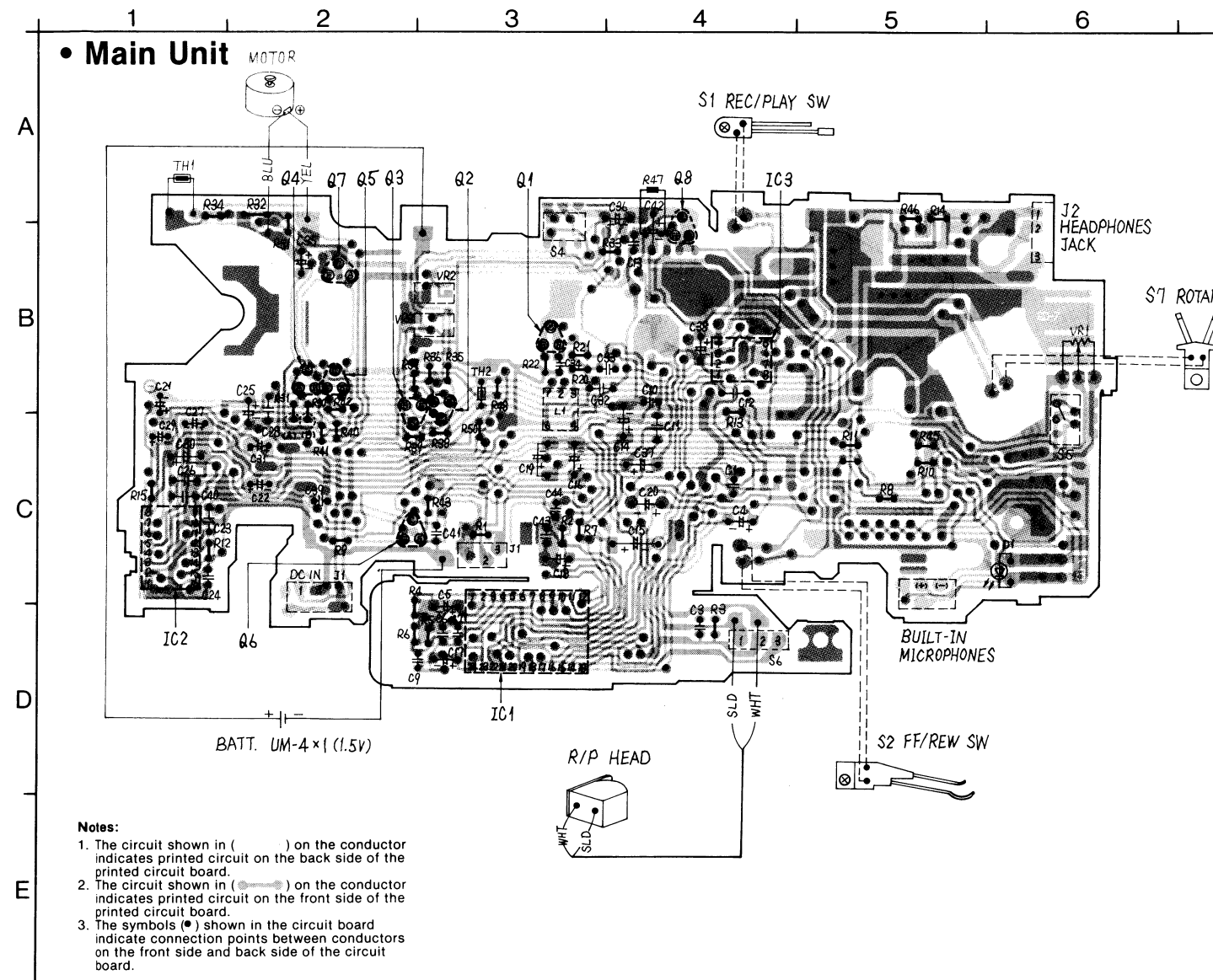
IC1 AN6223S



IC2 AN6233S



CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM



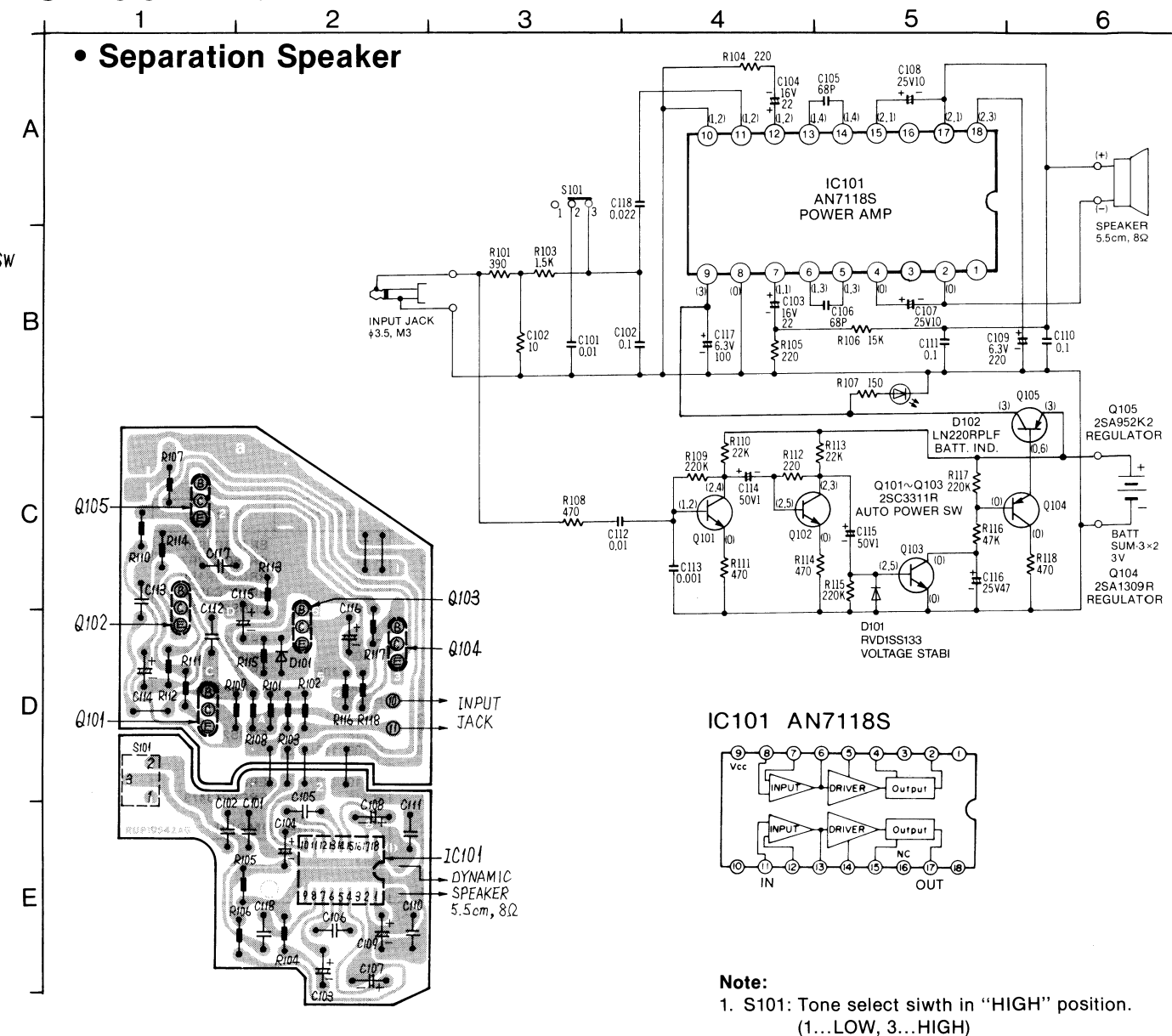
MEASUREMENT AND ADJUSTMENT METHODS

NOTES: Keep good condition, set switch buttons and controls in the following positions, unless otherwise specified.

- Make sure heads are clean.
- Make sure capstan and pressure roller are clean.
- Judgeable room temperature: $20 \pm 5^\circ\text{C}$ ($68 \pm 9^\circ\text{F}$)
- FF/REW switch: OFF
- MIC sensitivity switch: High
- Volume control: MAX.

ITEM	MEASUREMENT & ADJUSTMENT
A Head azimuth adjustment Condition: * Playback mode Equipment: * VTVM * Oscilloscope * Test tape (azimuth) ...QZZMFM * Resistor (8Ω)	<ol style="list-style-type: none"> Make connections as shown in fig. 1. Playback the 8kHz signal from the test tape (QZZMFM). Adjust screw (A) in fig. 2 for maximum output level.
B Check after motor replacement Condition: * Playback mode	<ol style="list-style-type: none"> After replacing the motor, open μ-adjusting slit (A) and short slit (B). (Refer to circuit board and wiring connection diagram) Play the test tape (QZZMWA) or prerecorded music tape and check whether or not the played back sound vibrates or fluctuates. If vibration or fluctuation occurs short μ-adjusting slit (A) and open slit (B).

SCHEMATIC DIAGRAM AND CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM



ITEM	MEASUREMENT & ADJUSTMENT
C Tape speed adjustment Condition: * Playback mode Equipment: * DC power supply * Digital electronic counter * Test tape ...QZZMWA for 2.4cm/s ...QZZMWBL for 1.2cm/s	<ol style="list-style-type: none"> Test equipment connection is shown in fig. 3. Apply 3V to DC IN. Connect the monitor output (8Ω) to the counter. Playback the tape speed adjusting tape (for 2.4cm/s 3kHz, QZZMWA, for 1.2cm/s QZZMWBL). Measure this frequency. <p>Standard value: $3000 \pm 60 \text{ Hz}$ (2.4cm/s), $3000 \pm 40 \text{ Hz}$ (1.2cm/s)</p> <ol style="list-style-type: none"> If measured value is not within standard, adjust as follows. <ol style="list-style-type: none"> 2.4cm/s adjustment <ol style="list-style-type: none"> Set the tape speed selector switch (S4) to 2.4cm/s. Adjust tape speed adjustment VR3 (for 2.4cm/s adjustment) so that frequency is $3000 \pm 60 \text{ Hz}$. 1.2cm/s adjustment <ol style="list-style-type: none"> Set the tape speed selector switch (S4) to 1.2cm/s. Measure in the same way as 2.4cm/s and adjust tape speed adjustment VR2 (for 1.2cm/s adjustment) so that frequency is $3000 \pm 40 \text{ Hz}$.

ELECTRICAL PARTS LIST

Numbering System of Resistor

Example	25	F	J	101
ERD	Wattage	Shape	Tolerance	Value (100Ω)
ERX	2	AN	J	2R2
Type	Wattage	Shape	Tolerance	Value (2.2Ω)

Resistor Type	Wattage	Tolerance
ERD: Carbon	10 : 1/8 W	J : ±5%
ERG: Metal Film	12 : 1/2 W	
ERX: Metal Film	25 : 1/4 W	
ERQ: Fuse Type Metal	1 : 1 W	
RRD: Carbon (Chip Type)	18 : 1/8 W	

REPLACEMENT PARTS LIST

Important safety notice
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

Numbering System of Capacitor

Example	1H	102	Z	F
ECKD	Voltage	Value (1000 pF)	Tolerance	Peculiarity
ECEA	50	M	R47	
Type	Voltage	Peculiarity	Value (0.47 μF)	

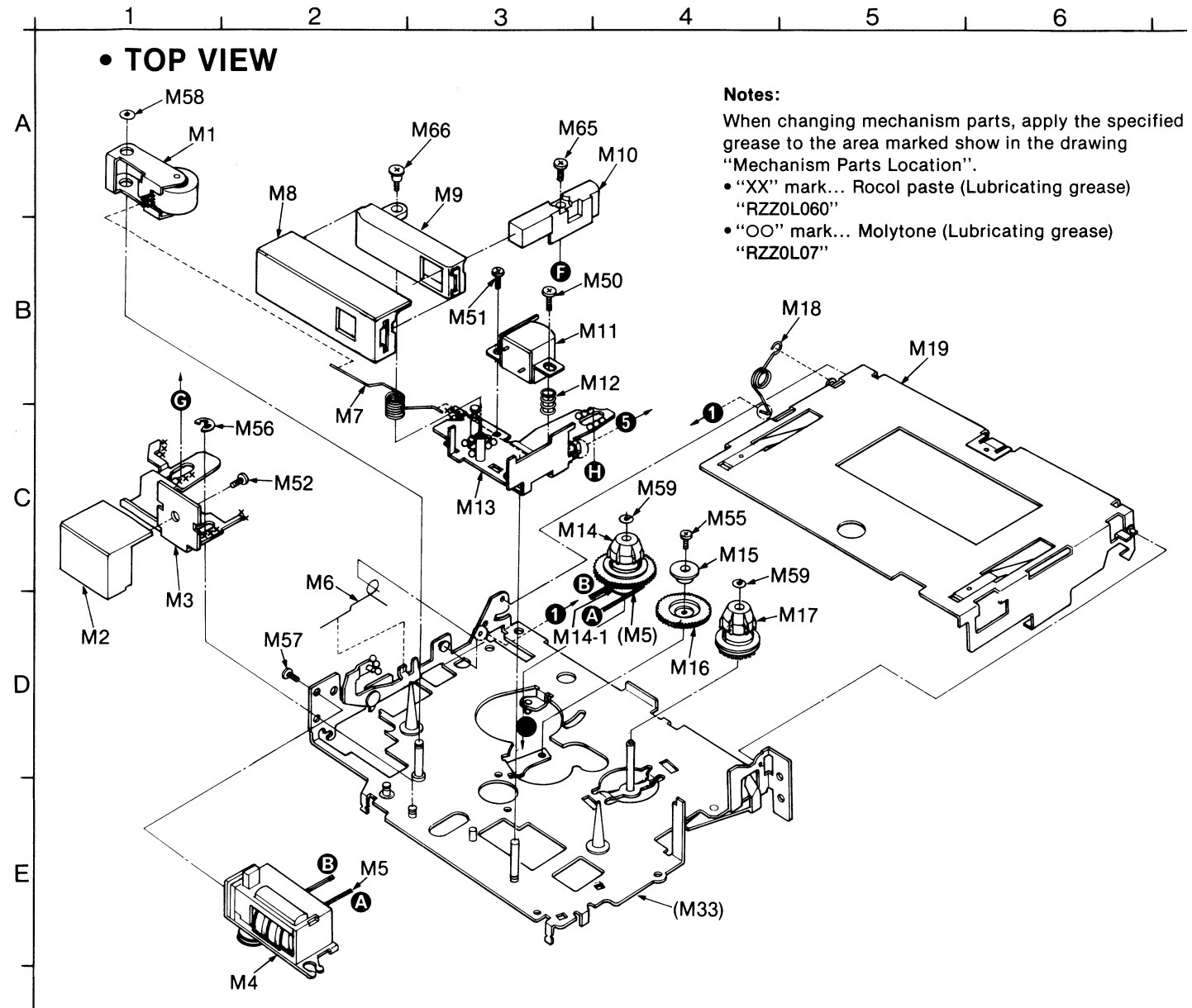
Capacitor Type	Voltage		Tolerance
	ECEA Type	Other	
ECEA: Electrolytic	0J : 6.3 V	2H : 500 V DC	C : ±0.25 pF
ECCD: Ceramic	1A : 10 V	1 : 100 V	J : ±5%
ECKD: Ceramic	1C : 16 V	DKC : 400 V AC	K : ±10%
ECQM: Polyester	1E : 25 V		Z : +80%, -20%
ECQP: Polypropylene	1H : 50 V		P : +100%, -0%
ECET: Electrolytic	1V : 35 V		
ECEA□□□N: Non Polar Electrolytic	50 : 50 V		
QCU □: Ceramic (Chip Type)	25 : 25 V		
ECUX: Ceramic (Chip Type)	16 : 16 V		

Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.	Part No.
CAPACITORS							
C 1, 7, 39	RCUX1E104ZF	C 33	RCUV1H822KD	R 6, 43	ERJ6GCJ391	R 50	ERJ6GCJ680
C 3, 24	RCUV1H562MD	C 34	RCUV1H222KD	R 7, 13	ERJ6GCJ100	R 51	RRJ6GCJ2R7
C 4, 17	ECSE1CT1050R	C 36	ECSE0GT4750L	R 8	ERJ6GCJ102	R 52	RRD18XK1R0
C 5, 18, 35	ECSE0GT4750R	C 101, 112	ECFT1C103MD	R 9, 20	ERJ6GCJ221	R 57	RRJ6GCJ274
C 6, 9, 43	RCUX1E223MD	C 102, 110, 111	ECFT1C104MD	R 10, 36	ERJ6GCJ333	R 101	ERDS2TJ391
C 10, 44	RCUX1E103MD	C 103, 104	ECEA1CU220	R 12	ERJ6GCJ331		
C 11, 12	ECUX1E224ZF	C 105, 106	RCBS1H680JL			R 102	ERDS2TJ100
C 13	RCUX1E153MD	C 107, 108	ECEA1EU100	R 14	ERJ6GCJ223	R 103	ERDS2TJ152
C 14, 16, 19, 30	ECSE0GT106M8	C 109	ECEA0JU221	R 15	ERJ6GCJ560	R 104, 105	ERDS2TJ221
C 15	ECEA0GKS221	C 113	ECKD1H102MD	R 21	ERJ6GCJ472	R 106	ERDS2TJ153
				R 22	ERJ6GCJ4R7	R 107	ERDS2TJ151
C 20, 47	ECEV0GV470R	C 114	ECEA1HK010	R 30	RRJ6GCJ8R2	R 108, 111, 114, 118	ERDS2TJ471
C 21	ECEA0GKS470	C 115	ECEA1HU010	R 31	RRJ6GCJ5R6		
C 22	ECEA0GKS221	C 116	ECEA1EU470	R 32	ERD10TLJ1R0	R 109, 112, 115, 117	ERDS2TJ224
C 23	ECUX1E473ZF	C 117	ECEA0JU101	R 33	ERJ6GCJ183	R 110, 113	ERDS2TJ223
C 25, 38	ECSE0JT225SR	C 118	ECFT1C223MD	R 34, 40	ERJ6GCJ330	R 116	ERDS2TJ473
C 26, 28	ECUV1E334ZF	RESISTORS		R 38	ERJ6GCJ393		
C 27	ECEA0GKS101	R 1, 5	ERJ6GCJ392	R 39	ERJ6GCJ562	CHIP JUMPER	
C 29	ECEA1CKK4R7	R 2, 11, 37	ERJ6GCJ152	R 41, 45, 48	ERJ6GCJ103	RJ 1	ERJ6GCJ000
C 31	ECSF0GE226	R 3, 35	ERJ6GCJ153	R 42	ERJ6GCJ181		
C 32	ECUV1H332KU	R 4	ERJ6GCJ121	R 44	ERJ6GCJ272		
				R 47	ERJ6GCJ474		

• The color name in parentheses () in the parts list is the color of that part.

Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description
INTEGRATED CIRCUITS			DIODES & RECTIFIERS			THERMISTORS		
IC 1	AN6223S	IC (MIC/REC/PLAY AMP)	D 1	LN230RALPCF	Diode (Si)	TH 1	ERTD2FEK200M	Thermistor
IC 2	AN6233S	IC (Earphone AMP)	D 101	RVD1SS133	Diode (Si)	TH 2	RRT153K	Thermistor
IC 3	AN6253S	IC (Mechanism Control)	D 102	LN220RPLF	Diode (Si)	SWITCHES		
IC 101	AN7118S	IC (Power AMP)	COIL			S 1	RSH1A49Z	Push Switch (REC/Playback)
TRANSISTORS			L 1	RL08A1	Choke Coil	S 2	RSH1A50Z	Push Switch (FF/REW)
Q 1, 4	2SC2411KR	Transistor (Si)	VARIABLE RESISTORS			S 4, 5	RSS2B48Z	Slide Switch (Tape Speed, Mic Sens)
Q 2, 5	2SC2412KS	Transistor (Si)	VR 1	RVV1H4A14	Volume Control (Black)	S 6	RSS2A50Z	Slide Switch (REC)
Q 3	2SC2412KR	Transistor (Si)	VR 2	EVM14GA00B24	1.2cm/s Tape Speed Adj. VR, 20kΩ (B)	S 7	RSH2A21Z	Switch (Rotary Detection)
Q 6, 8	2SB1051S	Transistor (Si)	VR 3	EVM14GA00B14	2.4cm/s Tape Speed Adj. VR, 10kΩ (B)	S 101	QSS1234	Slide Switch (Tone Selector)
Q 7	2SB766S	Transistor (Si)	JACKS			J 1	QJA0188	Jack, DC IN
Q 101, 102, 103	2SC3311R	Transistor (Si)				J 2	QJA0189	Jack, EXT. MIC
Q 104	2SA1309R	Transistor (Ge)				J 3	RJC3M1Z	Jack, Monitor (Black)
Q 105	2SA952K2	Transistor (Ge)				J 4	RJE160Z	Jack, Separate MIC (Black)

MECHANISM PARTS LOCATION



SPECIFICATIONS

ITEM	VALUE	REMARKS
Wow and flutter (JIS)	WRMS: At 2.4cm/s; Less than 0.3% At 1.2cm/s; Less than 0.55%	Use 3kHz test tape (QZZMWA; for 2.4cm/s) (QZZMWBL; for 1.2cm/s)

Pressure of Pinch

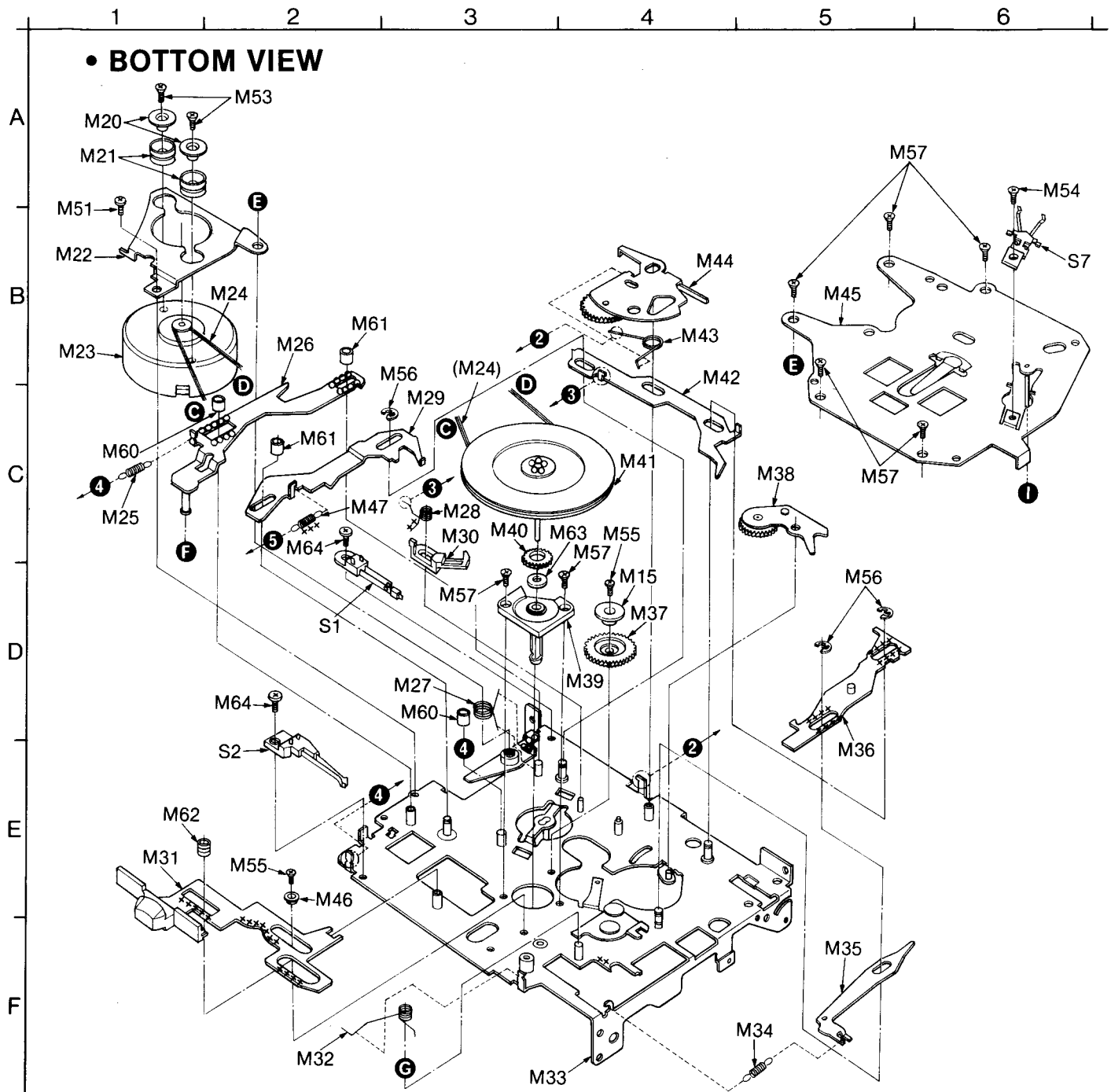
Roller: 95±10g (g • cm)

Take up Tension:

	Take up Torque
Playback	2~4
FF	2~4
REW	5.5~8.5

REPLACEMENT PARTS LIST

Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description
MECHANICAL PARTS			M 11	RJH0M00YZ	Record/Playback Head	M 24	RDV30Z	Belt, Flywheel
M 1	RUBG0008Z	Pinch Roller Ass'y	M 12	QBC1428	Spring, Azimuth	M 25	RUD19Z	Spring, Record Rod
M 2	RBC740Y	Stop/Eject Button (Black)	M 13	RUAG0006Z	Head Base Ass'y	M 26	RUBG0027Z	Record Rod Ass'y
M 3	RUB380Z	Stop Rod Ass'y	M 14	RDVG0004Z	Take-up Reel Table Ass'y	M 27	RUW29Z	Spring, Erase Safety Lever
M 4	RULG0004Z	Tape Counter Ass'y (Black)	M 15	RDF3039Z	Collar, Play Gear A/B	M 28	RUW32Z	Spring, Lock Rod
M 5	RDV31Z	Belt, Tape Counter	M 16	RDG5788Z	Play Gear-A	M 29	RUB371Z	Play Rod
M 6	RUW33Z	Spring, Eject	M 17	RDVG0003Z	Supply Reel Table	M 30	RUB381Z	Brake
M 7	RUW30Z	Spring, Pinch Roller	M 18	RUW34Z	Spring, Cassette Holder			
M 8	RBZ547Y	Cover, Playback Button (Black)	M 19	RUCG0002Z	Cassette Holder Ass'y	M 31	RUW35Z	Spring, Stop Rod
			M 20	RHM201Z	Collar (Motor)	M 33	RUAG0008Z	Mechanism Chassis Ass'y
M 9	RBC739Z	Play Button (Black)				M 34	RUD18Z	Spring, Record Release Rod
M 10	RJH2M00XZ	Erase Head (Orange)	M 21	RHG5030Z	Rubber Cushion (Motor)	M 35	RUBG0028Z	Record Release Rod Ass'y
			M 22	RUL742Z	Motor Angle	M 36	RUBG0021Z	F.F Rod Ass'y
			M 23	MKFN20DA1A	DC Motor			



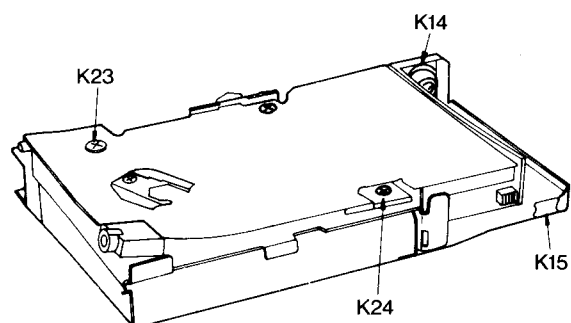
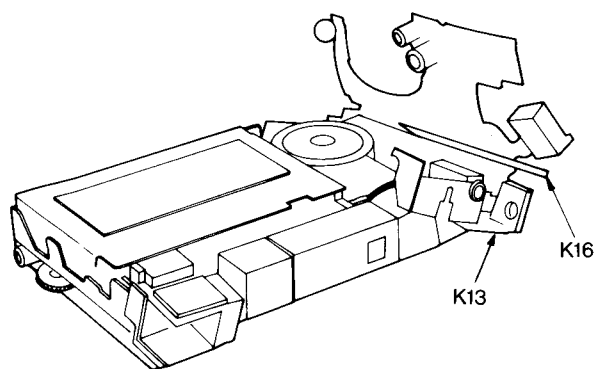
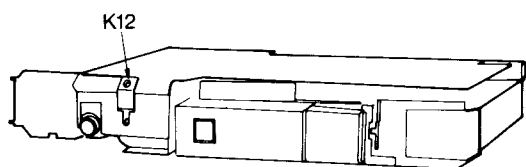
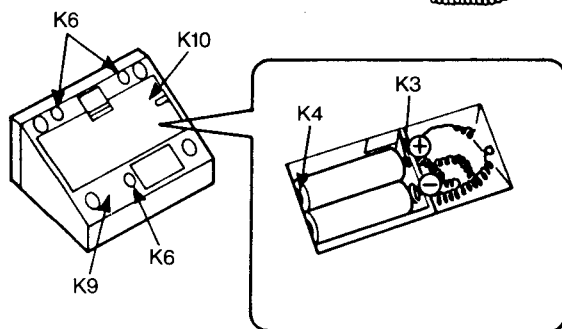
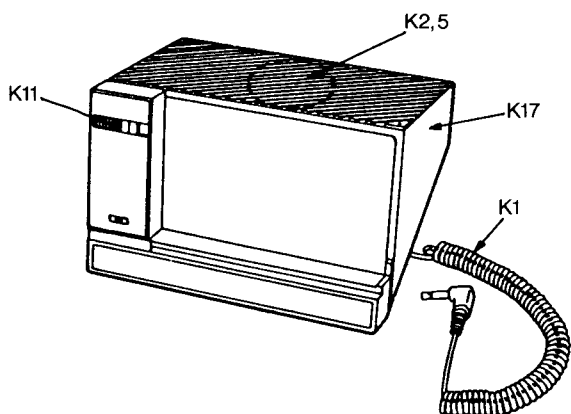
SPECIFICATION

Recording bias current	around 550 μ A
Bias oscillation frequency	around 36kHz
Standard recording input level	around -72dB

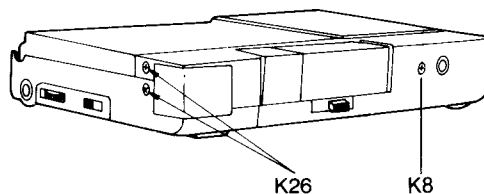
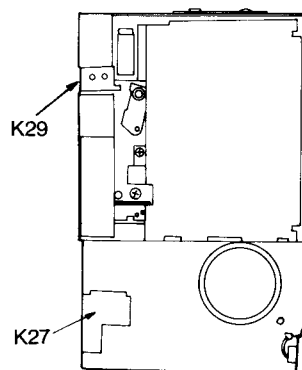
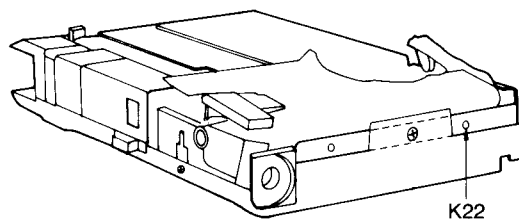
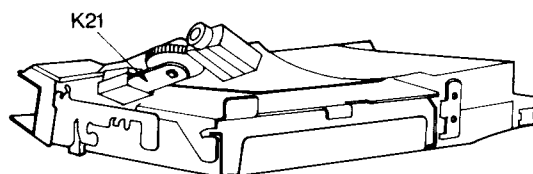
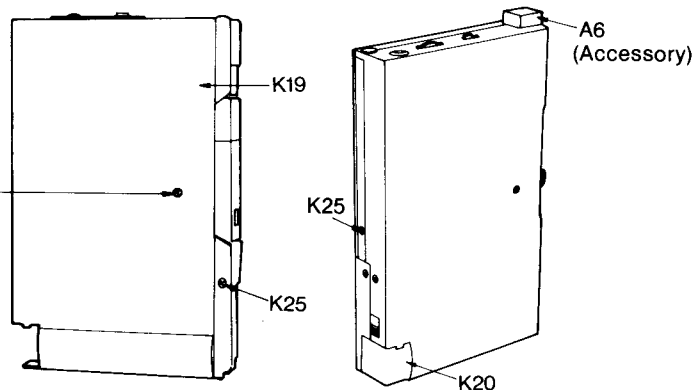
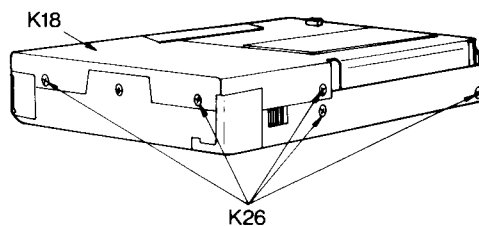
Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description
M 37	QDG1389	Play Gear-B	M 51	XQN14 + A14	Screw $\varnothing 1.4 \times 14$ (Head, Motor M'tg)	M 58	RMW170Z	Nylon Washer (Pinch Roller M'tg)
M 38	RUBG0022Z	Gear Plate Ass'y, FF	M 52	XQN16 + AQ25	Screw $\varnothing 1.6 \times 25$ (Stop/Eject Button M'tg)	M 59	QBW2109	Washer (Take-Up/Supply Reel Table M'tg)
M 39	RHMG0001Z	Metal Ass'y, Capstan Retainer	M 53	XQS16 + A3FZ	Screw $\varnothing 1.6 \times 3$ (Motor M'tg)	M 60	RHM197Z	Collar (REC Rod, Head Base)
M 40	RDG5785Z	Gear, Capstan	M 54	QH1346	Screw (Rotary Switch M'tg)	M 61	RHM199Z	Collar (REC/Play Rod)
M 41	RDWG0004Z	Flywheel Ass'y	M 55	RHE5083Z	Screw $\varnothing 1.2 \times 1.5$ (Play Gear, FF Rod M'tg)	M 62	RHM200Z	Collar (FF Rod)
M 42	RUB368Z	Lock Rod	M 56	XUC12FT	Stop Ring (Stop Rod, Play Rod, FF Rod M'tg)	M 63	QBW2060	Washer (Flywheel)
M 43	RUW31Z	Spring, Intermediate Gear	M 57	XQS14 + A14FN	Screw $\varnothing 1.4 \times 1.4$ (Tape Counter, Metal, Flywheel Bracket M'tg)	M 64	XQN14 + C16	Screw $\varnothing 1.4 \times 1.6$ (Leaf Switch M'tg)
M 44	RUB0023Z	Intermediate Gear Ass'y				M 65	QH1350	Screw (Erase Head M'tg)
M 45	RMQG0001Z	Flywheel Bracket Ass'y				M 66	QH1338	Screw (Play Button M'tg)
M 46	RHM196Z	Collar (FF Rod)				M 67	RUBG0025Z	FF/REW Button Ass'y (Black)
M 47	RUD17Z	Spring, FF Rod						
M 50	QH1336	Screw, Azimuth						

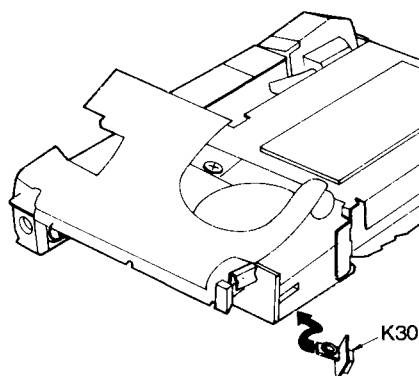
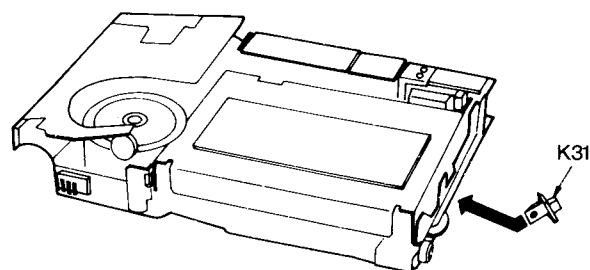
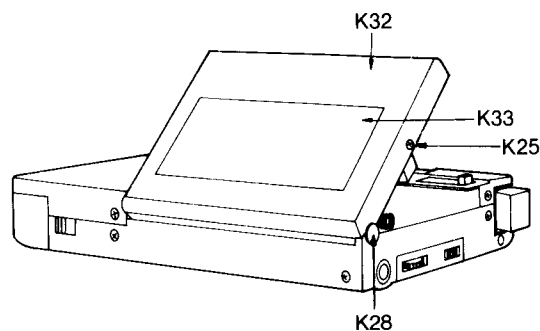
CABINET PARTS LOCATION

(Separate Speaker)



(Main Unit)





REPLACEMENT PARTS LIST

Important safety notice
Components identified by Δ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

Notes:

- [Z]For all European areas except United Kingdom.
[E]For United Kingdom.
[X]For Asia, Latin America, Middle East and Africa areas.
[L]For Australia.

• The color name in parentheses () in the parts list is the color of that part.

Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description
CABINET PARTS			K 18 [Z][E]	RYM2NZ36Z	Upper Case Ass'y (Black)	A 1-1	RWR84625A38	Ear Pad (Black/Gray)
K 1	RJP0F28Z	Speaker Cord	K 18 [X][L]	RYM2NZ36X	Upper Case Ass'y (Black)	A 2 [Z]	RPAC1Z	AC Adaptor Δ
K 2	EAS5P17SB	Speaker	K 19 [Z][E]	RYFNZ36Z	Bottom Case Ass'y (Black)	A 2 [E]	RPAC1ZE	AC Adaptor Δ
K 3	RJC93004Z	Battery Terminal (+/-), S. Speaker	K 19 [X][L]	RYFNZ36Z	Bottom Case Ass'y (Black)	A 2 [X]	RPAC1X	AC Adaptor Δ
K 4	RJC751Z	Battery Spring \ominus (S. Speaker)	K 20	RYFNZ36X	Bottom Case Ass'y (Black)	A 2 [L]	RPAC1XL	AC Adaptor Δ
K 5	XTN3 + 8G	Tapping Screw $\oplus 3 \times 8$ (Speake, S. Speaker M'tg)	K 21	RYN1NZ36J	Battery Cover Ass'y (Black)	A 3 (S3)	RJE169Z	Microphone Cord (Black)
K 6	XTN2 + 8GFZ	Screw $\oplus 2 \times 8$ (Rear Cabinet, S. Speaker M'tg)	K 22	RUA641Z	Chassis, Switch Holding	A 4 [Z][E]	RQK9004Z	Carrying Case (Black)
K 7	XQN16 + CJ6	Screw $\oplus 1.6 \times 6$ (P.C.B, S. Speaker M'tg)	K 23	RUL762Z	Plate, Cabinet Holding	A 4 [X][L]	RQK9004Y	Carrying Case (Black)
K 8	XQS14 + A16FZ	Screw $\oplus 1.4 \times 1.6$ (Rear Cabinet M'tg)	K 24	XQNQC16A22FN	Screw $\oplus 1.6 \times 22$ (P.C.B M'tg)	A 5 [Z][E]	RQX4682Z	Instruction Book
K 9	RKF779Z	Bottom Cabinet, S. Speaker (Black)	K 25	XQN14 + C14	Screw $\oplus 1.4 \times 1.4$ (R/P Switch M'tg)	A 5 [X][L]	RQX4681Z	Instruction Book
K 10	RYN2NZ36J	Battery Lid Ass'y, S. Speaker (Black)	K 26	XQS14 + A2FZ	Screw $\oplus 1.4 \times 2$ (Bottom Case M'tg)	A 6	RJM161Z	Separate Microphone (Black)
K 11	RBD340Z	Knob, Tone Selector (Black)	K 27	RHR1278Z	Holder, Jack	A 7 [X]	RJP120ZS	Plug AC Adaptor Δ
K 12	RUL761Z	Plate-A, Cabinet Holding	K 28	RKE520Z1	Cover-A (Black)	A 8 [X][L]	QFT20CDNPY	Cassette Tape
K 13	RJB4007Z1	Battery Case (Black)	K 29	RKE521Z1	Cover-B (Black)	A 9 [X]	UM4 (NG)	Battery
K 14	RJC8000Z	Battery Spring (-)	K 30	RBD336Z	Knob, Tape Speed Select (Black)	PACKINGS		
K 15	RJT806Z	Battery Terminal (+)	K 31	RBD337Z	Knob, MIC Sensitivity Select (Black)	P 1 [Z][E]	RPK2130Z	Gift Box
K 16	RDF3073Z	Shaft, P.C.B Retainer	K 32	RKG126Z1	Cassette Lid (Black)	P 1 [X][L]	RPK2129Z	Gift Box
K 17 [Z][E]	RYM1NZ36Z	S. Speaker Grille Ass'y (Black)	K 33	RGP989Y	Ornament Plate (Black)	P 2	RPN4775Z	Cushion-A (for Accessories Parts)
K 17 [X][L]	RYM1NZ36J	S. Speaker Grille Ass'y (Black)	ACCESSORIES			P 3	RPN4776Z	Cushion-B (for Unit)
			A 1	RPVJ190J	Earphone Ass'y	P 4	RPN4788Z	Pad-A
						P 5 [Z]	RPN4793Z	Pad-B (for AC Adaptor)
						P 6	RPP700Z	Polyethylene Cover (for Main Unit)
						P 7	RPP713Z	Polyethylene Cover (for S. Speaker)